



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/465,592	12/17/1999	JOANNE P. CULVER	LAZE-01000US	9065
23910	7590	12/29/2005	EXAMINER	
FLIESLER MEYER, LLP FOUR EMBARCADERO CENTER SUITE 400 SAN FRANCISCO, CA 94111			CHU, KIM KWOK	
			ART UNIT	PAPER NUMBER
			2653	

DATE MAILED: 12/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/465,592	<b>Applicant(s)</b> CULVER ET AL.	
	<b>Examiner</b> Kim-Kwok CHU	<b>Art Unit</b> 2653	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on Amendment filed on August 10, 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 5, 10, 11, 13-19, 22, 23, 29, 32, 40-46, 49-51, 57, 58 and 60 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10, 11, 13-19, 22, 23, 32, 40-46, 49-51, 57 and 58 is/are allowed.
- 6) ☒ Claim(s) 29 is/are rejected.
- 7) ☒ Claim(s) 60 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 December 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Claim Objections***

1. Claim 60 is objected to because of the following informalities:

(a) in claim 60, line 1, the term "according to Claim 59" should be changed to --according to Claim 58-- because Claim 59 has been cancelled.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --  
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 29 is rejected under 35 U.S.C. § 102(b) as being anticipated by Koyanagi et al. (U.S. Patent 5,471,064).

Koyanagi teaches a memory apparatus having all the elements and means as recited in claim 29. For example, Koyanagi teaches the following:

(a) as in claim 29, a movable media 4 having a surface for placing anomalies thereon (Figs. 4, 5a, 5b and 5c);

(b) as in claim 29, a moveable reading/writing mechanism 5 (Fig. 4);

(c) as in claim 29, the reading/writing mechanism 5 has a moveable platform (Fig. 4; driving device is a movable platform);

(d) as in claim 29, at least one fine tip portion 25 attached to the moveable platform 5 configured to write (cause) anomalies and read anomalies on the media surface (Fig. 4);

(e) as in claim 29, a media movement mechanism 401 attached to the movable media 4 and configured to move the media 4 in response to media control signals (Fig. 4);

(f) as in claim 29, a platform movement mechanism 10a attached to the platform 5 and configured to move the platform in response to platform control signals (Fig. 4);

(g) as in claim 29, at least one fine tip portion 25 comprises a device configured to cause the formation of an anomaly on the media 4 surface (Figs. 5a, 5b and 5c); and

(h) as in claim 29, a re-planing device configured to remove at least part of each anomaly on the media surface 4 (Figs. 5a, 5b and 5c; anomaly 27 is removed from the surface; column 6, lines 58-62).

***Allowable Subject Matter***

4. Claims 10, 11, 13-19, 22, 23, 32, 40-46, 49-51, 57 and 58 are allowable over prior art.

5. Claim 60 is objected to because of informality.

6. The following is an Examiner's statement of reasons for the indication of allowable subject matter based on the Amendment filed on August 15, 2005.

As in claim 10, the prior art of record fails to teach or fairly suggest that the electrostatic device comprises a series of prong sets, wherein, the prong sets are attached in series such that a first of the prong sets is attached at a first end to a fixed position of the apparatus, and a second end of the first prong set is attached to a first end of a second of the prong sets, and so on, until a last of the prong sets is attached at a first end to a second end of an  $n-1$  prong set, and a second end of the last ( $n$ ) prong set is attached to one of the media and the platform.

As in claim 22, the prior art of record fails to teach or fairly suggest that wherein the capacitance sensor comprises a fixed comb having fingers protruding in an x-axis direction, a moving comb connected to the coupling having fingers

protruding in an x-axis direction and interleaved among the fingers of the fixed comb.

As in claim 23, the prior art of record fails to teach or fairly suggest that a capacitive comb array comprises a fixed comb and a moving comb each having a set of fingers interleaved between the other set of fingers.

As in claim 32, the prior art of record fails to teach or fairly suggest that the activation/pickup device is at least one of electrostatically and capacitively activated causing the cantilever to vibrate near a resonance frequency of the cantilever; and the activation/pickup mechanism is configured to detect a phase change of vibrations of the cantilever caused by the fine tip interacting with the media surface via at least one of electrical, magnetic, and physical forces.

As in claims 40 and 41, the prior art of record fails to teach or fairly suggest that the z-axis drive mechanism comprises a cantilever connected to the fine tip portion at one end, and at least one set of comb fingers rotatably attached to the platform allowing movement of the cantilever and the fine tip portion in at least a z-axis direction.

As in claim 43, the prior art of record fails to teach or fairly suggest that the z-axis drive mechanism comprises a lever connected to the fine tip portion at one end; a torsion bar connected at a second end of the lever; an isolation bridge

connected at one of the second end of the lever and the torsion bar; a second torsion bar connected to the isolation bridge.

As in claim 45, the prior art of record fails to teach or fairly suggest that the z-axis drive mechanism comprises a lever connected to the fine tip portion at one end; a thermal bimorph, comprising a heater, and at least two materials of different expansion coefficients; wherein a current applied to the heater raises the temperature of the bimorph, causing the bimorph to expand or contract and move the lever and the fine tip portion in a z-axis direction.

As in claim 49, the prior art of record fails to teach or fairly suggest that a cantilever having the fine tip attached at a first end; a moving assembly attached to the cantilever, comprising, a torsion bar electrically isolated and attached to the cantilever, and a force receiver attached to the cantilever and configured to apply force to the cantilever.

As in claim 57, the prior art of record fails to teach or fairly suggest that nubs are placed between the media and the platform for providing a bearing for movement of the platform relative to the media.

As in claim 58, the prior art of record fails to teaches or fairly suggest that the media comprises an amplifying media having electrodes at ends of the media, and a control area activated by the tips.

The features indicated above, in combination with the other elements of the claims, are not anticipated by, nor made obvious over, the prior art of record.

***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ichikawa (5,689,494) is pertinent because Ichikawa teaches a memory apparatus having an anomaly-causing probe.



8. Any response to this action should be mailed to:

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Or faxed to:

(571) 273-8300 (for formal communications intended for entry. Or:

(571) 273-7585, (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Any inquiry of a general nature or relating to the status of this application should be directed USPTO Contact Center (703) 308-4357; Electronic Business Center (703) 305-3028.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kim CHU whose telephone number is (571) 272-7585 between 9:30 am to 6:00 pm, Monday to Friday.

Kim-Kwok CHU

*De* 12/21/05  
Examiner AU2653  
December 21, 2005

(571) 272-7585

*William Korzuch*  
WILLIAM KORZUCH  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600